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A mathematical model for hydrodynamics of a steam flow to be condensed in a pipe

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Abstract

The process of steam condensation in pipes has been studied in the annular flow regime. The problem was presented in the conjugated form. Integral equations for the motion of steam and film have been obtained. An expression has been offered to determine the velocity profile of steam. The paper shows relative friction losses for the cases of steam condensation at the 0.7 and 3 MPa pressures. All these works were conducted within the scope of a refined one-dimensional model.